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10/522,757	01/28/2005	Michael Richard Richardson	19941 (XA2017)	9342
23389	7590	10/10/2007	EXAMINER	
SCULLY SCOTT MURPHY & PRESSER, PC			TAYONG, HELENE E	
400 GARDEN CITY PLAZA			ART UNIT	PAPER NUMBER
SUITE 300			2611	
GARDEN CITY, NY 11530				

  

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10/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/522,757	RICHARDSON, MICHAEL RICHARD
	Examiner Helene Tayong	Art Unit 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 January 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10 and 14-19 is/are rejected.
- 7) Claim(s) 11-13 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 January 2005 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/13/05
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 6, 9,16 and 19 are objected to because of the following informalities:
2. In claim 6 lines 2-3, change, " digitising" to -- digitizing --;
3. In claim 6 lines 2-3, change, " digitised" to -- digitized --;
4. In claim 9 line 3, change, " synchronisation" to -- synchronization --;
5. In claim 9, specify if sequences include all three (training sequences, synchronization signals, frequency correction bursts or any of the three) and, or dummy bursts.
6. In claim 16 lines 2-3, change, " digitising" to -- digitizing --;
7. In claim 16 lines 2-3, change, " digitised" to -- digitized --;
8. In claim 19 lines 2-3, change, " digitising" to -- digitizing --;
9. In claim 19 lines 2-3, change, " digitised" to -- digitized --. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1- 4,14,17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mege et al (US 20010005406) in view of Brunner et al (US 6301470).

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(1) with regards to claim 1;

Mege et al in fig. 2 discloses a method of regenerating a remotely transmitted signal (pg. 3, [0037]) comprising

a symbol stream modulated onto a carrier in accordance with a predetermined standard ( fig. 1, 2 and 3, pg. 3, [0028]), the method including the steps of:

a) receiving the remotely transmitted signal having known characteristics ( fig. 2, 10 and 9, pg. 3, [0037]);

b) determining frame timing of the received signal (fig. 2, 11, pg.3, [0039]-[0040]);

c) identifying the locations of sequences within the signal from the frame timing ( fig. 2, 11, pg.4, [0041]-[0044]);

d) identifying the structure of the sequences (pg. 4, [0046]-[0053]);

e) estimating phase shift values at the locations of the sequences ( pg. 4, [0046]-0053]);

f) demodulating the symbol stream using the estimated phase shift values and the structure of the sequences ( fig. 2,12, pg. 4, [0045]); and

Mege et al discloses all of the subject matter disclosed above, but for specifically teaching (g) remodulating the symbol stream using the phase shift values.

However, Brunner et al in the same field of endeavor, teaches a remodulating the symbol stream using the phase shift values (fig. 2, 24 and col. 6, lines 22-28).

One of ordinary skilled in the art at the time of the invention would have been able to incorporate the device of Brunner et al in the method of Meye et al in order to

provide a radio communications receiver which operates to detect and recover data from a number of contemporaneously transmitted radio signals. The motivation to incorporate the device of Brunner et al in the system of Meye et al would be to improve on utilization of the radio frequency spectrum allocated to a wireless communication system, receiver, which are arranged to operate within such systems ( col. 1, lines 39-41).

(2) with regards to claim 2;

Mege et al further discloses wherein step f) comprises the additional step of correcting the symbol stream prior to step g (fig. 6, 42 and 43, pg. 7, [0084]-[0085]).

(3) with regards to claim 3;

Mege et al further discloses wherein the step of correcting the symbol stream incorporates substitution of symbols in the symbol stream where the symbol stream is known a priori (fig. 6 42 and 43, page 7, [0085]).

(4) with regards to claims 4 ,14 and 17;

Mege et al discloses all of the subject matter disclosed above, but for specifically teaching wherein step f) further comprises comparing demodulated symbols with known symbols to provide an estimate of the symbol error rate.

However, Brunner et al in the same filed of endeavor, teaches comparing demodulated symbols with known symbols to provide an estimate of the symbol error rate (fig. 2, 14 and Col. 5, lines 40-47).

One of ordinary skilled in the art at the time of the invention would have been able to incorporate the device of Brunner et al in the method of Meye et al in order to

provide a radio communications receiver which operates to detect and recover data from a number of contemporaneously transmitted radio signals. The motivation to incorporate the device of Brunner et al in the system of Meye et al would be to limit detection errors.

12. Claims 5-8 , 15, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mege et al and Brunner et al ( US 6301470) as applied in claim 4 above, and further in view of Raith et al ( US 4947409).

(1) with regards to claims 5,15 and 18;

Mege et al as modified by Brunner et al discloses all of the subject matter disclosed above, but for specifically teaching wherein step a) includes down converting the received signal to a nominal OHz intermediate frequency.

However, Raith et al in the same field of endeavor, teaches an intermediate frequency stage in (fig. 1,2 and col. 2, lines 40-47).

One of ordinary skilled in the art at the time of the invention would have been able to incorporate the device of Raith et al in the method of Meye et al as modified by Brunner et al in order to converting the received signal to a nominal OHz intermediate frequency. The motivation to incorporate the device of Raith et al in the system of Meye et al as modified by Brunner et al would be that the local frequency generator be locked to the transmitter frequency with good accuracy.

(2) with regards to claims 6, 16 and 19;

Mege et al as modified by Brunner et al discloses all of the subject matter disclosed above, but for specifically teaching wherein step a) further includes digitising

the intermediate frequency signal to provide a digitised symbol stream in a complex signal domain.

However, Raith et al in the same field of endeavor, teaches an A/D converter (fig. 2, 3, col. 2, lines 48-52).

One of ordinary skilled in the art at the time of the invention would have been able to incorporate the device of Raith et al in the method of Meye et al as modified by Brunner et al in order to digitising the intermediate frequency signal to provide a digitised symbol stream in a complex signal domain. The motivation to incorporate the device of Raith et al in the system of Meye et al as modified by Brunner et al would be for processing speed.

(3) with regards to claims 7;

Mege et al further discloses wherein step e) includes estimating mean beat frequency of the signal, removing the estimated mean beat frequency from the signal and storing the mean beat frequency in a database. (fig. 4, 15 and pg. 4, [0046]).

(4) with regards to claim 8;

Mege et al further discloses wherein step e) further includes estimating residual phase shift of the signal and storing the estimated residual phase shift of the signal in the database (fig. 4, 14, pg.4, [0046]-[0053]).

13. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mege et al and Brunner et al ( US 6301470) as applied in claim 1 above, and further in view of Burton (US 6885693).

(1) with regards to claim 9;

Mege et al as modified by Brunner et al discloses all of the subject matter disclosed above, but for specifically teaching wherein the sequences include training sequences, synchronisation signals, frequency correction bursts, or dummy bursts.

However, Burton in the same field of endeavor, teaches wherein the sequences include training sequences, synchronisation signals, frequency correction bursts (see abstract and fig. 3).

One of ordinary skilled in the art at the time of the invention would have been able to incorporate the method of Burton in the method of Meye et al as modified by Brunner et al in order to provide channel estimation which are capable of performing a channel estimation successfully even on a faded channel. The motivation to incorporate the device of Burton I in the system of Meye et al as modified by Brunner et al would be for frequency error correction and synchronization.

(2) with regards to claim 10;

Mege et al as modified by Brunner et al discloses all of the subject matter disclosed above, but for specifically teaching wherein the training sequences include eight training sequences associated with data bursts.

However, Burton in the same field of endeavor, teaches wherein the training sequences include 64 training sequences associated with data bursts ( col.2, lines 60-62).

One of ordinary skilled in the art at the time of the invention would have been able to incorporate the method of Burton in the method of Meye et al as modified by

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Brunner et al in order to provide the training sequences include eight training sequences associated with data bursts. The motivation to incorporate the device of Burton I in the system of Meye et al as modified by Brunner et al would be for frequency error correction.

#### ***Allowable Subject Matter***

14. Claims 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: The prior arts Mege et al (US 20010005406) and Brunner et al (US 6301470) do not disclose wherein the training sequences include a ninth training sequence associated with dummy bursts, the step of using training sequences and correlation peaks for multi-path compensation and wherein channel estimation of data sequences are used for multi-path compensation.

#### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Atobe et al ( US 4525676) discloses PSK demodulation system having carrier frequency variation compensation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene Tayong whose telephone number is 571-270-

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1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Helene Tayong

10/2/07



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SUPERVISORY PATENT EXAMINER